

# Computer Vision for Quality Inspection Powered by Orange Business Services

Basic offer from 35k€<sup>(1)</sup>  
Full offer on quotation



**Automate the retraining and the deployment of your ML models**  
Ensuring best quality and supervision of your Artificial Intelligence solutions

According to a recent survey published by Deloitte<sup>(2)</sup>: 93% of the manufacturing companies believe AI will be a crucial technology to drive growth and innovation. Most raised up use-cases when talking about Data Science in such a field are automation in inventory management, improvement of the workers' safety or the development of automatic quality inspection.

Orange Business Services is using its expertise in numerous fields as IoT, cloud, connectivity or big data to unlock these use-cases. One of the result is its offering: Computer Vision for quality inspection. This solution is easily and quickly deployable on AWS infrastructures whilst using the best technologies for model learning. Making manual inspection computerized and automated.



## Orange Business Services' solution Computer Vision for Quality Inspection

Orange Business Services offers an asset-based Computer Vision service made for visual inspection. It includes a trained Machine Learning model (using customer's data), the deployment of the model in the customer's infrastructure as well as a frontend interface.

Using photos taken on a production line, the solution can in near real-time detect defaults and validate the quality of each product. It replaces manual inspection which is time consuming and an expensive process. Orange Business Services' Computer Vision solution is able to detect smallest defects reliably, not relying on defect-labelled training data and is able to adapt automatically to new defects that have not occurred before.

### Basic offer – from 35k€<sup>(1)</sup>

- Pre-packaged solution
- State-of-the-art Computer Vision for quality inspection
- Training of models using custom dataset
- Frontend interface for model validation & testing
- Setup of AWS accounts and VPN Gateway

### Full offer - on quotation

- Setting up IoT devices or cameras for data collection, data cleaning and pre-processing
- Frontend interface and monitoring tools
- MLOps pipeline for retraining and deployment of the Computer Vision model
- VPN access, peering / routing / connection
- Tailor-made features

## Benefits

Kick-start the deployment of your automated quality inspection solution, with our asset-based service, instead of developing it from scratch.



### Low data requirement to train

Using the zero-shot learning technology, the model only needs a few pictures of "good products" to be trained and then be deployed



### Automatically detect new defects

The solution is able to adapt automatically to new defects that have not occurred before on the production line



### Close to real-time analysis

The solution can analyse up to 10 frames per second which is score reliable for production line. Meaning analysing 10 products per second



### Multi-environment solution

The solution can be deployed on a multitude of environments from cloud infrastructures (private or public cloud) to edge

## Orange Business Services on AWS

The AWS portfolio offers a great number of tools and components to develop a ready-to-deploy Computer Vision solution. To unlock the power of these cloud native components a skilled team of experts is required. Orange Business Services is providing the expertise as well as the asset of a ready-to-deploy Computer Vision solution for quality inspection. Orange Business Services' AWS certified experts will implement and customize the solution to bring its customers successfully to the end of their Machine Learning journey.

### Features



#### Zero-shot learning

The main challenge when developing default detection systems is to provide the good data set for model training. It must contain several examples of what is considered as "good products" but also numerous examples of each default that could be detected. A forgotten default in the training data set will not be detected by the model once it is running. By using the zero-shot learning technology the model must be trained only on a few examples of "good products". It will detect then all kind of default without being fed with examples of it. The main benefits of such a technology are the simpleness to train the model as well as the ability of the model to detect automatically all kind of defaults, even the new ones than has not occurred before.



#### Low-cost and fast training time

The Computer Vision model is requiring only a few examples of "good products" to be trained. It could be trained starting with 25 pictures depending on the accuracy needed. Therefore, the training time varies from minutes to hours. As example several Computer Vision models on the market are taking days to be trained. What it results from it is a very fast training and a minimal CPU consumption.

## Example: Computer Vision for bottles production quality inspection

### Challenge

Reducing the cost and improving the effectiveness of a legacy quality inspection system

The quality inspection system in the customer's bottle production line was out of date and using manual inspection processes.

Customer needed a computerized and less pricey system in order to accelerate its production and reduce costs.

### Solution

Feeding a ML model with pictures of the bottles on the production line to detect faulty items

By using our pre-built Computer Vision solution and the customer's data we did set up an automated quality inspection system. Using it, the customer can exclude defective products as well as monitor their frequency rate.

### Results

Automated and computerized inspection quality system

The solution enabled the customer to improve its production flow while reducing the cost of it. Having real-time tests of the quality helped the customer to detect production problems earlier, preventing whole batches of costly defective products.

## How to get started with Orange Business Services solutions

Orange Business Services sales representatives can be contacted through the [AWS Marketplace](#), the Orange Business Services [website contact form](#) or using the email address: [contact-marketplace@um-orange.com](mailto:contact-marketplace@um-orange.com).